



# UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,390	09/23/2003	Scott R. Bickham	SP02-180	2469
22928	7590	05/03/2006	EXAMINER	
CORNING INCORPORATED			RUDE, TIMOTHY L	
SP-TI-3-1			ART UNIT	
CORNING, NY 14831			PAPER NUMBER	
			2883	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/668,390

**Applicant(s)**

BICKHAM ET AL.

**Examiner**

Timothy L. Rude

**Art Unit**

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 15-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claims*

Claim 1 is amended.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 9-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Antos et al (Antos) 5,999,679 provided by Applicant.

As to claim 1, Antos discloses an optical fiber, comprising: a refractive index profile having a first moat with a negative delta (.DELTA.2), a second moat with a negative delta (.DELTA.4), and the refractive index profile is selected to provide a negative total dispersion at 1550 nm, a kappa value, defined as total dispersion divided by dispersion slope at 1550 nm, of less than 75 nm [col. 6, lines 25-66], and a negative dispersion slope at 1550 nm [col. 7, lines 17-34, col. 8, lines 10-14, col. 8, lines 65-67, and col. 9, lines 1-16]. Please note that Antos claims a version of his four segment

Art Unit: 2883

embodiment of Figure 1 having a negative dispersion slope. Examiner considers that subject matter to be owned by Antos as claimed by Antos.

As to claim 2, Antos discloses the fiber of claim 1 further comprising a central core having a positive delta ( $\Delta_1$ ), and a ring surrounding the first moat having a positive delta ( $\Delta_3$ ) [col. 6, lines 25-66].

As to claim 3, Antos discloses the fiber of claim 1 wherein the total dispersion at 1550 nm is more negative than about -40 ps/nm/km [col. 6, lines 25-66].

As to claim 4, Antos discloses the fiber of claim 1 wherein the total dispersion at 1550 nm is more negative than -40 and less negative than -400 ps/nm/km [col. 6, lines 25-66].

As to claim 5, Antos discloses the fiber of claim 1 wherein the total dispersion at 1550 nm is more negative than about -140 ps/nm/km [col. 6, lines 25-66].

As to claim 6, Antos discloses the fiber of claim 1 wherein the dispersion slope at 1550 nm is less than -0.75 and greater than -8.50 ps/nm<sup>2</sup>/km [col. 6, lines 25-66].

As to claim 7, Antos discloses the fiber of claim 1 wherein kappa at 1550 nm is between about 40 and 75 nm [col. 8, lines 39, 40, and 65-67].

As to claim 9, Antos discloses the fiber of claim 1 wherein a central core has a delta (.DELTA.1) of less than 2.0% [col. 6, lines 25-66].

As to claim 10, Antos discloses the fiber of claim 9 wherein an outer core radius (R1) of the central core is between about 1.2 and 3.1 microns [col. 3, lines 30-40, and Figure 1].

As to claim 11, Antos discloses the fiber of claim 9 wherein the central core has an alpha (a) of less than about 6 [col. 4, lines 27-35].

As to claim 12, Antos discloses the fiber of claim 1 wherein delta (.DELTA.2) of the first moat is less than -0.2% [col. 6, lines 25-66].

As to claim 13, Antos discloses the fiber of claim 12 wherein an outer radius (R2) of the first moat is located between about 4.5 and 10.6 microns [Figure 1].

As to claim 14, Antos discloses the fiber of claim 1 wherein delta (.DELTA.4) of the second moat is less than -0.05% [col. 6, lines 25-66].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antos.

As to claim 8, Antos discloses the fiber of claim 1.

Antos does not explicitly disclose the fiber includes a pin array bend loss at 1550 nm of less than 9 dB.

Please note: Applicant's recitation is merely a limitation as to desired low loss performance in a device claim that would be obvious to one of ordinary skill. Obviously

Art Unit: 2883

one would desire low loss for many applications. Furthermore, Applicant has provided no structure to support this performance limitation in a device claim other than the structure and other limitations rejected above. Examiner considers this performance limitation to be met by the structural limitations and other limitations rejected above, since examiner cannot find a discrete enabling disclosure in the instant Specification that would lead one to believe that one of ordinary skill in the art would not know to use the above fiber (limitations rejected above) per applicant's enabling disclosure to achieve the obviously desirable low claimed bend loss. In other words, this obvious performance limitation is considered to not further limit the structure of the device in view of the above rejected claim limitations, or it is considered not enabled by Applicant's Specification.

Antos teaches the desire to use an outside diameter greater than about 125  $\mu\text{m}$  to reduce loss due to bending [Applicant's bend loss at 1550 nm of less than 9 dB].

Antos is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to comprise Applicant's claimed device with a minimum outside diameter to achieve a pin array bend loss at 1550 nm of less than 9 dB as an optimization of a results effective variable [MPEP 2144.05, II, B].

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Antos with a minimum outside diameter of Antos to achieve a pin array bend loss at 1550 nm of less than 9 dB as an optimization of a results effective variable.

***Response to Arguments***

Applicant's arguments filed on 06 February 2006 have been fully considered but they are not persuasive.

**Applicant's ONLY substantive arguments are as follows:**

(1) Regarding base claim 1, Antos does not disclose negative dispersion slope at 1550 nm.

(2) Dependent claims are allowable because they directly or indirectly depend from an allowable base claim.

**Examiner's responses to Applicant's ONLY arguments are as follows:**

(1) It is respectfully pointed out that a negative dispersion slope is disclosed by Antos and it is claimed by Antos for his fiber designed to operate at 1550 nm [col. 7, lines 17-34, col. 8, lines 10-40, col. 8, lines 65-67, and col. 9, lines 1-16]. Please note that Antos claims a version of his four segment 1550 nm embodiment of Figure 1 having a negative dispersion slope. Examiner considers that subject matter to be owned by Antos as claimed by Antos.

(2) It is respectfully pointed out that in so far as Applicant has not argued rejection(s) of the limitations of dependent claim(s), Applicant has acquiesced said rejection(s).



***Conclusion***

References cited but not applied are relevant to the instant Application. IDS references USPAT 6,349,163 and 6,317,551 are also considered relevant.

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L. Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Mon-Thurs.

Art Unit: 2883

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



tlr

Timothy L Rude  
Examiner  
Art Unit 2883



Frank G. Font  
Supervisory Patent Examiner  
Technology Center 2800

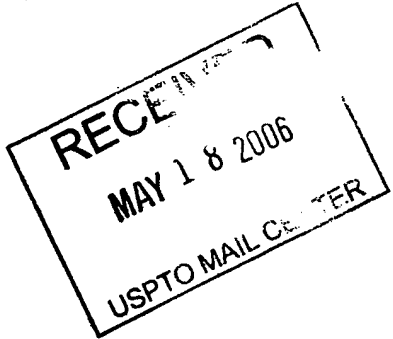
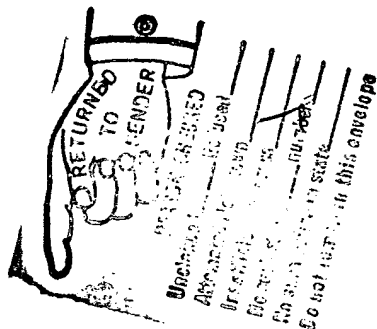
Organization **TC2800** Bldg./Room **Jeff**  
U. S. DEPARTMENT OF COMMERCE  
COMMISSIONER FOR PATENTS  
P.O. BOX 1450

ALEXANDRIA, VA 22313-1450

IF UNDELIVERABLE RETURN IN TEN DAYS

OFFICIAL BUSINESS

AN EQUAL OPPORTUNITY EMPLOYER



BEST AVAILABLE COPY